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A KEY

TO

RABBITBRUSH SPECIES

IN

NORTHERN NEVADA

by  
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Elko, Nevada

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NOTE

It is important to note that only the relatively common species of rabbitbrush found in northern Nevada are considered in this work.

Rabbitbrush species that may occur in Nevada but are not treated here include: Chrysothamnus linifolius, C. paniculatus, C. teretifolius, and C. vasyi.

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MEMORANDUM

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## Quick Reference to Nevada Species

## Common Names and Symbol

\*Not described in this key

Scientific Name		Symbol	Common Name
<i>Chrysothamnus</i>	<i>albidus</i>	CHAL9	Alkali rabbitbrush
"	<i>depressus</i>	CHDE2	Dwarf rabbitbrush
"	<i>greenei</i>	CHGR6	Greene rabbitbrush
*	" <i>teretifolius</i>	CHTE4	Needleleaf rabbitbrush
*	" <i>paniculatus</i>	CHPA12	Desert rabbitbrush
"	<i>nauseosus</i>	CHNA2	Rubber rabbitbrush
	<i>ssp. salicifolius</i>		Mtn. rubber rabbitbrush
	<i>ssp. albicaulis</i>	CHNAA	Whitestem rubber rabbitbrush
	<i>ssp. graveolens</i>		Green rubber rabbitbrush
	<i>ssp. consimilis</i>		Threadleaf rubber rabbitbrush
"	<i>parryi</i>	CHPA13	Parry rabbitbrush
	<i>ssp. parryi</i>		Parry rabbitbrush
	<i>ssp. attenuatus</i>	CHPAA	Thin Parry rabbitbrush
	<i>ssp. monocephalus</i>		Single head rabbitbrush
	<i>ssp. nevadensis</i>		Nevada rabbitbrush
"	<i>viscidiflorus</i>	CHVI8	Douglas rabbitbrush
	<i>ssp. viscidiflorus</i>	CHVIV2	Douglas rabbitbrush
	<i>ssp. latifolius</i>	CHVIL2	Broadleaf Douglas rabbitbrush
	<i>ssp. stenophyllus</i>	CHVIS	Small rabbitbrush
	<i>ssp. lanceolatus</i>	CHVIL	Lanceleaf rabbitbrush
	<i>ssp. puberulus</i>	CHVIP	Downy rabbitbrush
*	<i>ssp. pumilus</i>	CHVIP2	Dwarf green rabbitbrush
*	<i>ssp. humilus</i>	CHVIH2	Low rabbitbrush



A Key to Chrysothamnus Species

- 1 Herbage resinous-punctate (dotted with depressions of resin glands).
  - 2 Leaves terete (circular in cross-section); leaves at first flat but drying to filiform, glabrous with copious resinous exudate, surface with small pits; flowers white; alkaline soils.....C. albidus  
Pg. 3
- 1 Herbage not resinous-punctate.
  - 2 Twigs covered with densely compacted, felt-like tomentum or at least tomentose.
    - 3 Outer involucral bracts regularly shortened, not herbaceous tipped, acute to obtuse; inflorescence not spicate or racemose, mostly cymose.....C. nauseosus (complex)  
Pg. 3
    - 3 Outer involucral bracts commonly prolonged into a slender herbaceous tip (attenuate); inflorescence mostly racemose or spike-like.....C. parryi (complex)  
Pg. 6
  - 2 Twigs glabrous or minutely-spreading puberulent; not at all tomentose.
    - 3 Flowers white; leaves nearly round in cross-section; heads in terminal corymbose clusters; alkaline areas.....C. albidus  
Pg. 3
    - 3 Flowers pale to dark yellow; leaves not as above.
      - 4 Achenes glabrous.
        - 5 Involucral bracts 10 to 13 mm, keeled, strongly aligned into 5 vertical ranks.....C. depressus  
Pg. 8
      - 4 Achenes densely pubescent.
        - 5 Involucral bracts with narrowly acuminate, greenish tips; flowers whitish or yellow.....C. greenei  
Pg. 8
        - 5 Involucral bracts acute to obtuse; flowers yellow.....C. viscidiflorus (complex)  
Pg. 11



C. albidus (Jones) Greene. ALKALI RABBITBRUSH.

A much branched, aromatic, leafy shrub, 1 to 3 feet high. It has erect, brittle, glabrous, very resinous, white-barked branches. The glabrous, filiform leaves are 3/4" to 1-1/2" long, 0.5 to 2 mm wide, and the margins become revolute with drying. Their surface is covered with small pits and abundant resinous exudate. Leaves crowded with axillary fascicles.

Heads with 4 to 6 white disc flowers arranged in small, compact terminal cymes. Corollas white, 7 to 8 mm long. Each head subtended by about 15 glabrous, resinous, involucre bracts, 7 to 9 mm long. Involucre bracts terminate in attenuate to acuminate, usually curved tips. Achenes about 4 mm long and densely covered with long, soft hairs. August to November. Definite halophyte. Dry, alkaline, sandy or silty plains, 1,000 to 6,400 feet. May invade strongly alkaline areas as a pioneer plant. In less alkaline flats it may be associated with C. nauseosus ssp. consimilis, basin wildrye and greasewood. (See Figure 1A)

C. nauseosus (Pallas) Britt. RUBBER RABBITBRUSH.

A shrub, 1 to 7 feet high, with several erect stems rising from the base and these branch to form rounded bushes. Branches covered with green, yellow-green, gray-green to white feltlike tomentum usually mixed with a resinous gum, making the plant somewhat sticky. This coating often mistaken for part of the bark but can be discerned by scraping with fingernail.

Leaves nearly filiform in some subspecies to broadly linear in others. Leaves covered with tomentum (subglabrous), 3/4" to 2-1/2" long. Leaves not twisted nor gland-dotted.

Heads usually arranged into a cymose inflorescence. Each head bears 20 to 25 glabrous to densely tomentose involucre bracts arranged in up to 5 vertical rows. Flowers usually 5, yellow. Corolla 7 to 12 mm long.

Note: Typical form (C. nauseosus ssp. nauseosus) occurs mostly east of Continental Divide and on Great Plains. Other subspecies of C. nauseosus that are found in Nevada but are not listed in this work due to their limited occurrence include: gnaphalodes, hololeucus, and leiospermus.

# Key to Subspecies

- 1 Involucral bracts puberulent to densely wooly (tomenose); foliage mostly gray or white.
  - 2 Leaves 3 to 10 mm (1/8" to 3/8") wide, 4 to 8 cm (1-1/2" to 3") long; bracts mostly obtuse .....C. nauseosus  
ssp. salicifolius
  - 2 Leaves 3 mm (1/8") or less wide, 2.5 to 4 cm (1" to 1-1/2") long; bracts mostly acute .....C. nauseosus  
ssp. albicaulis
- 1 Involucral bracts glabrous; foliage usually greenish-yellow.
  - 2 Leaves 1 to 3 mm wide, 4 to 6 cm (1-1/2" to 2-3/8") long; mildly ill-scented .....C. nauseosus  
ssp. graveolens
  - 2 Leaves less than 1 mm wide, 2.5 to 5 cm (1" to 2") long; strongly disagreeable odor .....C. nauseosus  
ssp. consimilis

ssp. salicifolius - MOUNTAIN RUBBER RABBITBRUSH.

A shrub 1' to 6.5' (3 to 20 dm) high. Its ascending to erect twigs are very leafy and are covered with a gray-green, fairly compact tomentum. Leaves are broadly linear, from 4 to 8 cm (1-1/2" to 3") long and 3 to 10 mm (1/8" to 3/8") wide, making them the largest leaves of the species. Involucral bracts are 7 to 8 mm long, mostly obtuse, nearly glabrous and arranged in rather obscure ranks. Corollas yellow, about 1 cm long and have a minutely pubescent throat. Achenes densely pubescent. In Utah, the mace gall induced by tephritid flies found on this subspecies. (See Figure 4)

Fairly widespread at higher elevations in Nevada, i.e., East Humboldt Range, Elko County. It extends down to the foothills in parts of its range where it is intermixed with ssp. albicaulis and ssp. graveolens.

This subspecies appears to be the most palatable of the most common subspecies listed here. (See Figure 2D)



*C. nauseosus* ssp. *albicaulis* - WHITESTEM RUBBER RABBITBRUSH.

A shrub from 6 to 20 dm (2' to 6-1/2') high with erect leafy branches and leaves covered with a permanent, dense, white to grayish tomentum. Leaves are 2.5 to 4 cm long, 0.5 to 1.5 mm wide (or to 3 mm in some forms). The strongly keeled, acute involucre bracts are white, more or less tomentose, 8 to 10 mm long and arranged into 5 distinct vertical rows. Corollas yellow, 8 to 11 mm long and terminate in lobes 1 to 2 mm long. Achenes densely pubescent. In Utah, the cotton gall induced by tephritid flies specific to this subspecies. (See Figure 4)

Open slopes and flats, common and widespread on plains and foothills. 3,000 to 8,000 feet. August to October. (See Figure 2A)

ssp. *graveolens* - GREEN RUBBER RABBITBRUSH.

A shrub from 2' to 5' (6 to 15 dm) high. Its leafy, erect branches are yellow-green or sometimes gray-green and are covered with a compact tomentum. The leaves are linear, 1 to 3 mm wide, 4 to 6 cm (1-1/2" to 2-1/2") long and only slightly pubescent. Involucre bracts are 6 to 8 mm long, glabrous at least on their backs, acute, keeled and arranged in vertical rows. Corolla yellow, 7 to 9 mm long with lobes 0.5 to 1.5 mm long. Achenes densely pubescent. In Utah, the cotton gall induced by tephritid flies found on this subspecies. (See Figure 4)

Well drained foothills, but extends up into mountains and down to valleys and plains where it intermixes with ssp. *consimilis*.

Generally less palatable than white or gray subspecies although some forms of this subspecies are utilized to a moderate degree by livestock and mule deer. (See Figure 2C)

ssp. *consimilis* - THREADLEAF RUBBER RABBITBRUSH.

A shrub to 3 m (10 ft.) in height when mature. It has leafy, erect branches covered with a green to yellow-green dense tomentum. The very narrow, threadlike (linear-filiform) leaves are less than 1 mm wide and are 2.5 to 5 cm (1" to 2") long. The leaves are usually covered with a green to yellow-green tomentum and are somewhat resinous. When crushed, the twigs and leaves emit a strongly disagreeable odor. Involucre bracts are acute, glabrous, keeled and arranged in fairly distinct vertical rows. Involucre bracts are 6.5 to 8.5 mm long. Corolla 7 to 9.5 mm long, with glabrous lobes 1 to 2.5 mm long. Achenes densely pubescent. In Utah, the cotton gall induced by tephritid flies found on this subspecies. (See Figure 4)

Most common in alkaline valleys and plains. In less alkaline areas *consimilis* intermixes with ssp. *albicaulis* and *graveolens*.

Least palatable of *C. nauseosus* subspecies. May be of value in revegetating disturbed areas where browsing animals not desired, i.e., road cuts, etc. (See Figure 2B)



C. parryi (Gray) Greene. PARRY RABBITBRUSH.

A shrubby species somewhat intermediate in height, stem and leaf tomentum, and growth habit between rubber rabbitbrush and low rabbitbrush. (C. viscidiflorus). Parry rabbitbrush is low, dense shrub similar in habit to certain forms of C. viscidiflorus. It is usually from 2 to 6 dm (8" to 24") in height with numerous spreading to erect flexible branches. These branches are covered with feltlike white to green tomentum. The tomentum is neither as dense nor resinous as C. nauseosus. Leaves are glabrous to tomentose, somewhat viscid and are narrowly linear to elliptic, from 0.5 to 8 mm wide and 1 to 8 cm (3/8" to 3") long. Flower heads arranged in terminal leafy racemes that sometimes form panicles. Involucral bracts 9 to 14 mm high and terminate in acuminate to very attenuate herbaceous tips. Corollas yellow, funnelform to tubular, 8 to 11 mm long. Achenes 5 to 6 mm long, covered with long, shaggy, appressed hairs. July to September.

Dry, open places in mountains and foothills. Generally palatable but of limited extent thus not important as forage. Browsed mainly during periods of drought.

NOTE: Subspecies of C. parryi that may be found in Nevada but are not listed in this work due to their limited occurrence include: asper and howardi.

Key to Subspecies

- 1 Flowers 10 or more per head; involucral bracts with straight, attenuate tips .....C. parryi  
ssp. parryi
- 1 Flowers 9 or less per head.
  - 2 Inflorescence of single or paired heads; upper leaves usually extend beyond the inflorescence; flowers 5 or 6 .....C. parryi  
ssp. monocephalus
  - 2 Inflorescence racemose of several to many head; upper most leaves rarely extend beyond inflorescence; flowers 9 to 12 mm long, yellow.
  - 3 Involucral bracts with straight tips; leaves mostly 1 mm wide; heads 11 to 15 mm (3/8" to 5/8") long .....C. parryi  
ssp. attenuatus
  - 3 Involucral bracts with slender recurved tips; leaves 0.5 to 3 mm wide; heads 14 to 19 mm (3/8" to 3/4") long..C. parryi  
ssp. nevadensis

ssp. parryi - PARRY RABBITBRUSH.

Low shrub with erect branches 3 dm (12") or more high. Uppermost leaves usually extend beyond the inflorescence. Flowering heads contain 10 to 20 disc flowers and are subtended by obscurely ranked involucre bracts with straight, attenuate tips. Blooms August to September.

Dry plains, valleys and hillsides in northeastern Nevada.

ssp. monocapulus - SINGLE HEAD RABBITBRUSH.

Low shrub from 0.5 to 3 dm (2" to 12") high with rigid, spreading branches. Leaves viscid, somewhat tomentulose, linear-oblongate or spatulate, 1 to 3 cm (3/8" to 1-1/16") long, and less than 1.5 cm (5/8") wide. Upper leaves usually extend beyond the inflorescence. Flowering heads occur singly or in pairs on the end of short leafy branches. Heads of 5 or 6 disc flowers subtended by obscurely ranked involucre bracts with straight, attenuate tips.

Occurs in high mountains of western Nevada and eastern California on dry rocky slopes from 9,800 to 11,200 feet. (See Figure 1C)

ssp. attenuatus - THIN PARRY RABBITBRUSH

Low shrub with mostly erect stems to 6 dm (24") high. It has green, slightly viscid, narrowly linear leaves, 2 to 4 mm long and about 1 mm wide. Leaves not extended beyond inflorescence. Heads 5 to 7 flowered. Involucre bracts ranked into 5 vertical rows with slender, straight tips. Blooms August to October.

Occurs in sagebrush, pinyon-juniper and yellow pine vegetational types. (See Figure 1B)

ssp. nevadensis - NEVADA RABBITBRUSH.

Low shrub with ascending to erect branches to 6 dm (2 ft.) high. Leaves linear to linear-oblongate, 1.5 to 4 cm (1/2" to 1-1/2") long and 0.5 to 3 mm wide. Leaves green to resinous but usually gray tomentose. The uppermost leaves rarely extend beyond the inflorescence. Flowering heads 4 to 6 flowered. Involucre bracts ranked and with slender recurved tips.

Dry mountain sides from eastern California to eastern Nevada. 4,300 to 8,900 feet.



C. depressus - DWARF RABBITBRUSH.

A small shrub or subshrub with many erect herbaceous stems arising from a much branched, decumbent, spreading woody crown, 1 to 3 dm (4" to 12") high. The branches covered with a dense scabrid pubescence. Leaves green, narrowly oblanceolate to spatulate, lower most rounded or obtuse, the upper becoming sharply apiculate (ending in an abrupt slender tip), 7 to 20 mm (5/16" to 3/4") long, 1 to 4 mm wide and finely puberulent or scabrous like the branches.

Heads contain 5 disc flowers arranged into compact terminal cymes. Involucral bracts with mucronate to attenuate tips, 10 to 13 mm long, ordered into 5 distinct vertical ranks. Achenes 5 to 5.5 mm long, glabrous or obscurely pubescent toward their apex. Pappus brownish-white, longer than corolla.

Dry plains, hills and rocky mountain slopes from 3,300 to 6,900 feet. Often heavily browsed by sheep, cattle and wildlife. It is a source of protein when grasses and forbs have dried.

C. greenei (Gray) Greene. GREENE RABBITBRUSH.

Small highly branched shrub, 1 to 3.5 dm (4" to 14") high. Its glabrous, brittle twigs are green at first but soon become white and shiny. Bark on the lower branches often peels off in sheets. The nearly glabrous or slightly scabrous-ciliate margined leaves are narrowly linear, 1.2 mm or less wide, 1 to 3.5 cm long, and are more or less viscidulous. Flower heads normally contain 5 disc flowers in rounded or flat-topped cymes. Involucral bracts are 5 to 7 mm long, arranged in 5 poorly defined vertical ranks, and terminate in narrowly acuminate, greenish tips. Corollas, tubular to funnellform, whitish or yellow, 4 to 4.5 mm long. Achenes about 3 mm long and covered with dense, long, shaggy hairs. Very similar to C. viscidiflorus ssp. stenophyllus, except for attenuate bracts of C. greeni.

Occurs on plains, valleys and foothills. Provides some browse in areas where it is found. Occurs mostly in the eastern half of the Great Basin and Upper Colorado River Basin.



C. DEPRESSUS



C. PARRYI  
VAR. NEVADENSIS





Figure 1.--Drawings of *Chrysothamnus taxa*. (A) *C. albidus*, Robertson s.n., Wells, Elko Co., Nev. (1.1X). (B) *C. parryi* ssp. *attenuatus*, McArthur and Blauer SC 74-35, Wasatch Pass, Sevier Co., Utah (1.1X). (C) *C. parryi* ssp. *monocephalus*, McArthur and Blauer N-82, Slide Mountain, Washoe Co., Nev. (1.6X).

Source: USDA-Forest Service, Research Paper INT-220

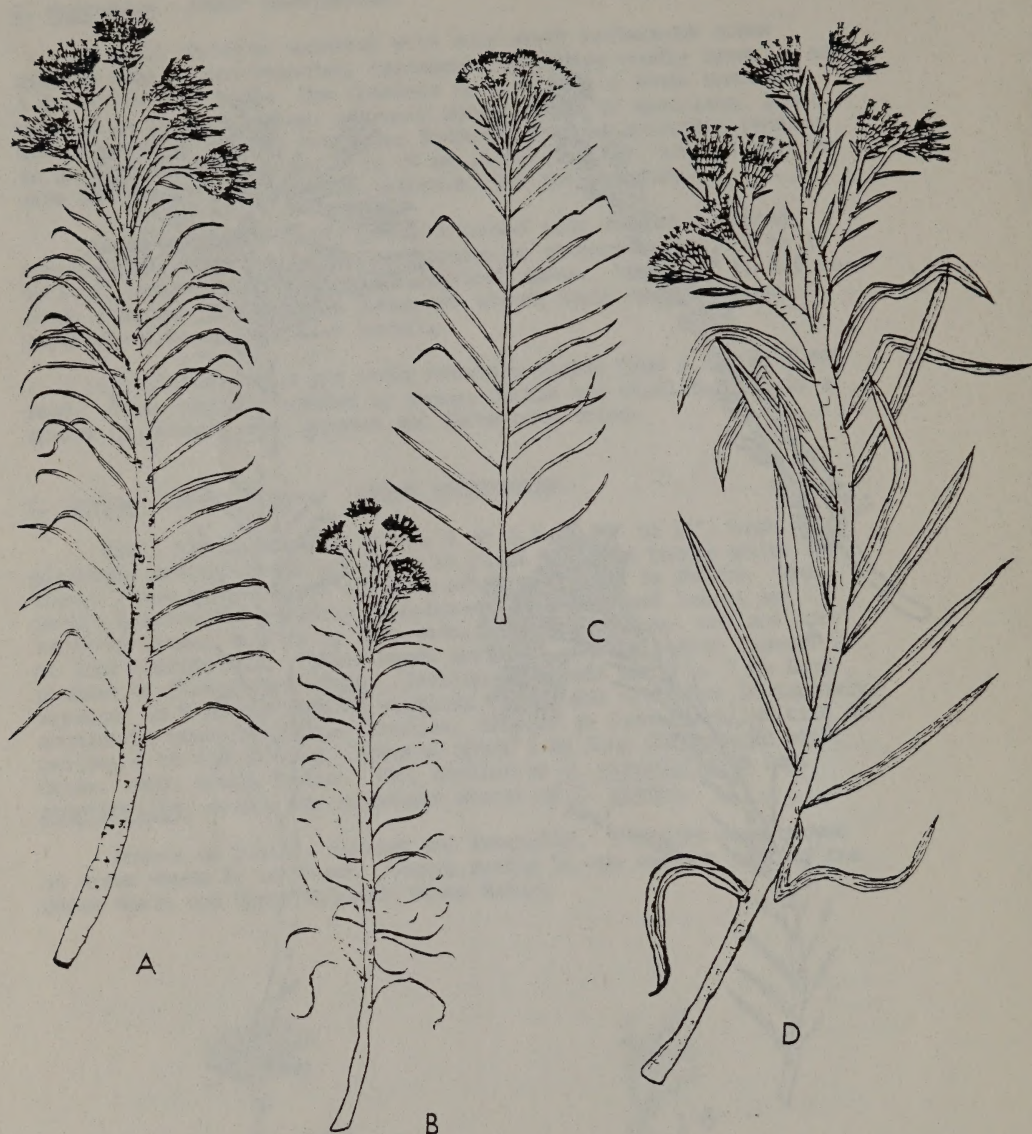


Figure 2 --Drawing of subspecies of *Chrysothamnus nauseosus* (A.) *C. nauseosus* ssp. *albicaulis*, McArthur and Blauer N-18, Wells, Elko Co., Nev. (0.8X). (B.) *C. nauseosus* ssp. *consimilis*, McArthur and Blauer N-42, Deeth, Elko Co., Nev. (0.6X). (C.) *C. nauseosus* ssp. *graveolens*, Blauer 291A, Henryville, Garfield Co., Utah (0.5X). (D.) *C. nauseosus* ssp. *salicifolius*, Tierman s.n., Strawberry Valley, Wasatch Co., Utah (1.1X).



C. vicidiflorus - DOUGLAS RABBITBRUSH.

A shrub of exceedingly diverse habit and variable foliage characteristics. Usually 3 dm to 1 m (12" to 3.5') tall with many erect stems branching from a simple base. The brittle, erect twigs are glabrous or puberulent with pale green or white bark. Leaves narrowly linear to oblong or oblanceolate, 1 to 6 cm (3/8" to 2") long and often twisted, 2 to 5 mm wide. Leaves glabrous or pubescent and commonly sticky or gummy (viscidulous) with usually scabrous margins.

Heads contain about 5 perfect, fertile disc flowers each arranged in compact terminal cymes. Involucral bracts about 15, in poorly to well defined vertical ranks.

Mostly in dry, open places in valleys, plains and foothills and extending to moderate elevations in the mountains. 2,600 to 11,000 feet. These subspecies are not highly salt tolerant and are not usually found in pockets with poor drainage where pH and salinity are high.

Antelope, elk, big horn sheep, deer, and livestock show varying preference for Douglas rabbitbrush depending on season, locality, and subspecies.

Key to Subspecies

1 Leaves and twigs (upper stems) pubescent.

- 2 Leaves 2.5 to 6 mm (1/16" to 1/8") wide, 1.5 to 4 cm (5/8" to 1-1/2") long; involucral bracts without thickened greenish spot near tip; common in mountains and upper foothills .....C. viscidiflorus  
ssp. lanceolatus

- 2 Leaves up to 2 mm wide, 3 cm (1-1/16") long; involucral bracts often with thickened greenish spot near tips; occurs on dry plains, valleys and foothills .....C. viscidiflorus  
ssp. puberulus

1 Leaves and twigs (especially upper most) glabrous.

2 Shrubs usually over 5 dm (20") high.

- 3 Leaves 1 to 5 mm (1/32" to 3/16") wide, 2 to 5 cm (3/4" to 2") long; usually with very pungent odor ...C. viscidiflorus  
ssp. viscidiflorus

- 3 Leaves 4 to 12 mm (1/8" to 1/2") wide, broadly elliptic to elliptic-oblong; leaves 3 to 5 nerved; obtuse but not mucronate .....C. viscidiflorus  
ssp. latifolius

- 2 Shrubs less than 5 dm (20") tall; leaves 1 mm wide; 1 to 3 cm (3/8" to 1") long, filiform, odor various .....C. viscidiflorus  
ssp. stenophyllus



ssp. viscidiflorus - DOUGLAS RABBITBRUSH

Largest of the subspecies of low rabbitbrush. Mature shrubs usually more than 5 dm (20") tall, ranging from 5 to 12 dm (20" to 48"). Branches, leaves and inflorescences are glabrous but viscid (sticky). Leaves broadly linear to narrowly lanceolate, bright green, 1 to 5 mm wide, 2 to 5 cm (3/4" to 2") long, flat or twisted. Leaf margins sometimes scabrid, ciliate to scabrous. Crushed foliage usually emits a very pungent odor. Stems sometimes sparsely puberulent. Branches of cymes are glabrous. Involucral bracts are obtuse, oblong, not keeled, and 5 to 7 mm long.

Occurs on dry plains and hills, primarily in sagebrush and pinyon-juniper communities at elevations between 5,000 and 8,500 feet. This ssp. often becomes dominant in cleared or overgrazed areas. At lower elevations, this ssp. may be found associated with such halophytes as shadscale, winterfat and halogeton.

ssp. pumilus included in this ssp. as it is considered an environmental variant. The ssp. latifolius is probably merely a wide-leaved variant of ssp. viscidiflorus.

This shrub may provide an important supply of browse to both game and livestock, particularly during late fall and winter after more desirable forage has been utilized. Flowering shoots provide good sheep feed. There is much variation in palatability among the different subspecies. Some may be heavily utilized while others receive little or no use. (See Figure 3D)

ssp. latifolius - BROADLEAF DOUGLAS RABBITBRUSH.

This is probably merely a wide-leaved extreme of ssp. viscidiflorus. Leaves are broadly elliptic to elliptic-oblong, 6 to 12 mm wide and 2 to 5 cm long. Leaves are 3 to 5 nerved, obtuse (blunt or rounded at the apex) but not mucronate (having a short, small, abrupt, tooth-like tip). Shrubs mostly 4 to 10 dm (16" to 40") high. Fairly restricted to mountains of northeastern Nevada. (See Figure 3D)

ssp. stenophyllus - SMALL RABBITBRUSH.

A low glabrous shrub to 3 dm (12") high with pronounced white bark especially on younger twigs. Leaves linear-filiform, often twisted, viscidulous, 1 mm or less wide, 1 to 3 cm long and glabrous except for the usually scabrid and revolute margins. The branches of the small, compact cymes are glabrous. Involucral bracts are 4 to 16 mm long, not keeled and lance-oblong.

Common on most desert ranges, particularly in the southern portion of the Great Basin. Usually found in sagebrush type on poorer soils and disturbed site, but is also found growing with halophytes such as shadscale, fourwing saltbush, greasewood, and halogeton.

This ssp. on rocky foothills is often heavily utilized by game and livestock. Animals seem to prefer partially mature or mature plants to green immature ones. (See Figure 3C)

ssp. lanceolatus - LANCELEAF RABBITBRUSH.

A small shrub from 2 to 5 dm (less than 20") tall. Branches are straw colored or gray and are finely pubescent. Flower heads are borne in small compact cymes with densely pubescent branches. Involucral bracts are 5 to 6.5 mm long, lanceolate to oblong, obtuse to glabrous to pubescent. Achenes are densely strigose (with appressed, stiff, short hairs). Leaves pubescent.

Widespread and fairly common in dry foothill and mountainous habitats from 5,000 to 10,500 feet.

Substantial utilization of this ssp. by game and livestock has been reported in scattered areas of Nevada and Utah. (See Figure 3A)

ssp. puberulus - DOWNY RABBITBRUSH.

A small shrub to 5 dm (20") with yellowish to green, finely pubescent branches. Leaves linear to linear-filiform, mostly 1 mm (-2 mm) wide, 1.5 to 3 cm (-4 cm) long, sparsely to densely pubescent with scabrid-ciliate margins and often strongly twisted or revolute. Flower heads borne in small compact cymes with densely pubescent branches. Involucral bracts 5 to 6 mm long, lanceolate to oblong, acute to obtuse and are usually marked with a thickened greenish spot near their tips.

Occurs on dry plains, valleys and foothills, especially on poorer soils and disturbed areas. Most abundant in sagebrush communities although may be found intermixed with most other subspecies of Douglas rabbitbrush, shadscale, winterfat, halogeton and pinyon-juniper. Concentrated mainly at lower and intermediate elevations - below 7,000 feet. (See Figure 3B)

NOTE: The ssp. humilis is not morphologically well differentiated from this subspecies and is treated here as ssp. puberulus.





Figure 3.--Subspecies of *Chrysothamnus viscidiflorus*. (A.) *C. viscidiflorus* ssp. *lanceolatus*, McArthur and Blauer EC74-32, Wasatch Plateau, Sanpete Co., Utah (1.0X). (B.) *C. viscidiflorus* ssp. *puberulus*, McArthur and Blauer EC74-1, mouth of Ephraim Canyon, Sanpete Co., Utah (0.9X). (C.) *C. viscidiflorus* ssp. *stenophyllus*, McArthur and Blauer N-159, Caliente, Lincoln Co., Nev. (1.1X). (D.) *C. viscidiflorus* ssp. *viscidiflorus*, McArthur and Blauer SC74-7, Salina Canyon, Sevier Co., Utah (1.1X).

Source: USDA-Forest Service, Research Paper INT-220



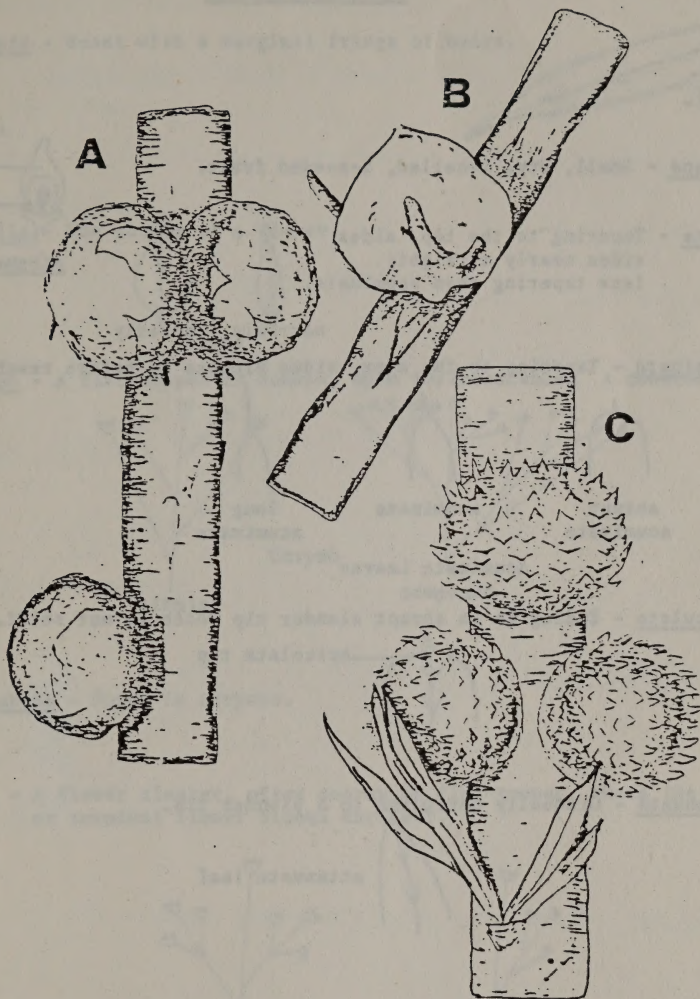
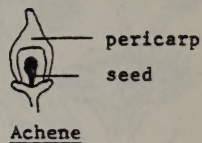


Fig. 4. Drawings of gall forms. A. callus. B. cotton. C. mace. (4X).

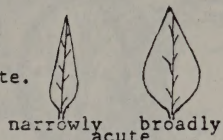
Source: Great Basin Naturalist Vol. 39 No. 1  
McArthur, Tiernan, & Welch, 1979

## GLOSSARY OF TERMS

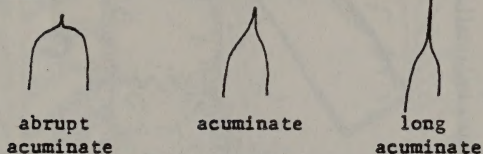
Achene - Small, dry, 1-celled, 1-seeded fruit.



Acute - Tapering to the tip, sides nearly straight; less tapering than acuminate.

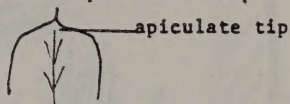


Acuminate - Tapering to the apex, sides pinch in before reaching the tip.

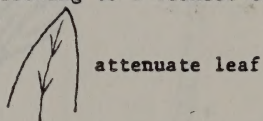


Acuminate Leaves

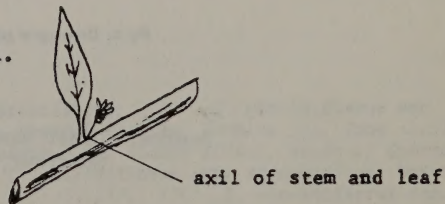
Apiculate - Ending in an abrupt slender tip which is not stiff.



Attenuate - Gradually narrowing to a slender tip.

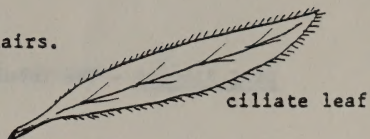


Axillary - Of or related to the axil.



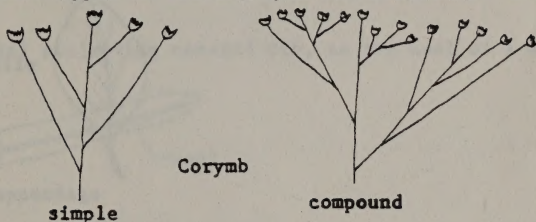


Ciliate - Beset with a marginal fringe of hairs.



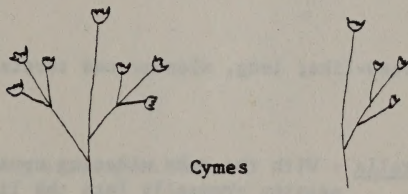
Corolla - The petals of a flower.

Corymb - A flat-topped or convex, open inflorescence. A contracted raceme.



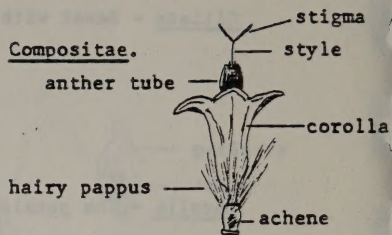
Corymbose - Borne in corymbs.

Cyme - A flower cluster, often convex or flat-topped, where the central or terminal flower blooms earliest.

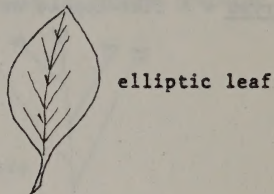


Cymose - Bearing cymes or cyme-like.

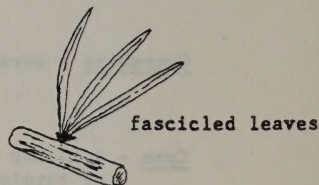
Disc Flowers - The tubular flowers or heads of Compositae.



Elliptic - Shaped like an ellipse, widest in center and 2 ends equal.

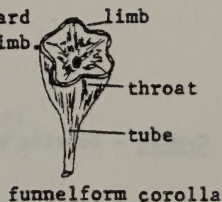


Fascicled - Borne in close bundles or clusters.



Filiform - Thread-like; long, slender and terete.

Funnelform Corolla - With the tube widening upward passing gradually into the limb.



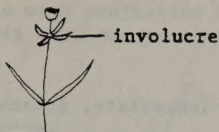
Glabrous - No hairs present at all; also used for smooth.



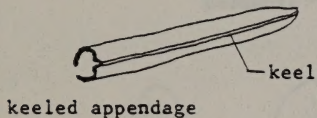
Head - The involucrete inflorescence of Compositae.

Inflorescence - The flowering part of a plant, flower cluster.

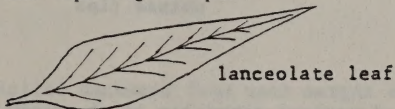
Involucre - A whorl of distinct bracts subtending a flower or an inflorescence.



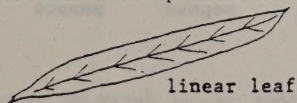
Keeled - Having a dorsal projecting central rib, as the keel of a boat.



Lanceolate - Lance-shaped; several times longer than wide, broadest toward the base and tapering to apex.

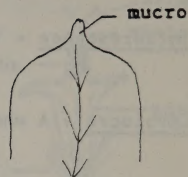


Linear - Narrow and flat with sides parallel.



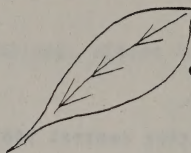
Mucro - A short, small, abrupt tooth-like tip.

Mucronate - Tipped with a mucro.



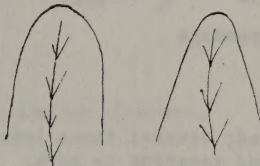
mucronate leaf

Oblanceolate - Inversely lanceolate, attached at the tapered end.



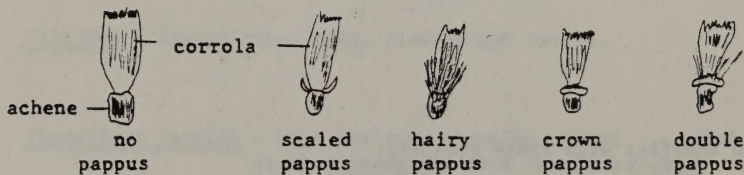
oblanceolate leaf

Obtuse - Blunt or rounded at apex.

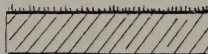


obtuse tips

Pappus - The crown of various character at the summit of the achene.



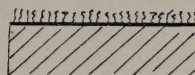
Puberulent - With very short hairs; minutely pubescent.



puberulent

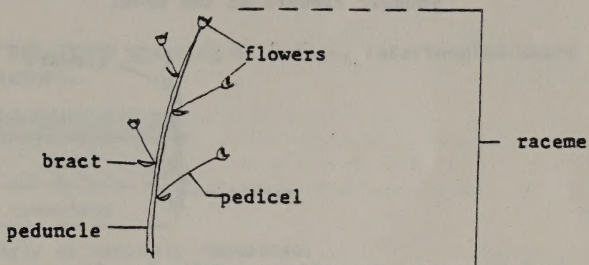


Pubescent - Covered with short hairs.



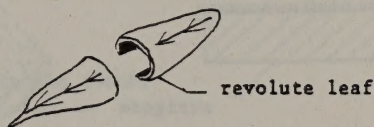
pubescent

Raceme - Inflorescence with pedicelled flowers borne along a more or less elongated axis with the younger flowers nearest the apex.

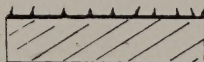


Racemose - In the form of a raceme.

Revolute - Rolled backward from each margin on the lower side.



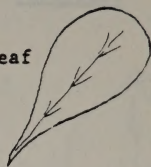
Scabrous - Rough or harsh to the touch, usually caused by short stiff hairs or projections.



scabrous

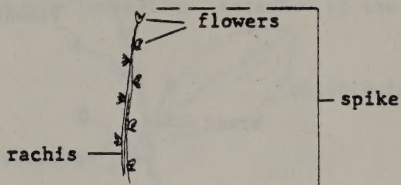
Spatulate - Broad or rounded at apex and tapering at base. Spoon-shaped.

spatulate leaf



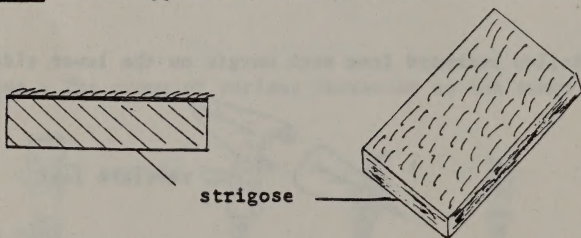
Spicate - In the form of a spike.

Spike - Inflorescence with flowers sessile along elongated axis with younger flowers at the apex.



Spike-like - Resembling a spike but flowers on short branches.

Strigose - With appressed, stiff, rather short hairs.

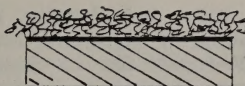




Terete - Circular in cross-section and more or less elongated. Like cylindrical but may be slightly tapering.



Tomentose - A dense wool-like covering of matted, intertangled hairs of medium length.



tomentose

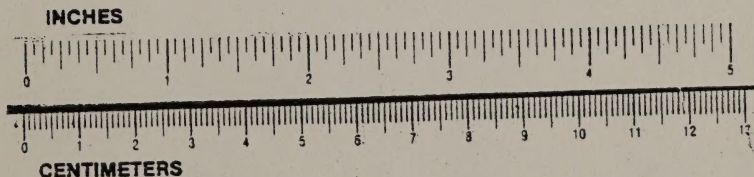
Tomentulose - Sparingly or minutely tomentose.

Tomentum - The covering of closely woven hairs in a tomentose surface.



Tubular Corolla

Viscid - Sticky or gummy to the touch.



#### REFERENCES

- Harrington, H.D. and Durrell, L.W.  
1957. How to Identify Plants. 203p. The Swallow Press, Inc., Chicago, Ill.
- Hitchcock, L.C., Cronquist, A., Ownbey, M., Thompson, J.W.  
1971. Vascular Plants of the Pacific Northwest. University of Washington Press, Seattle, Wash.
- McArthur, E.D., Tiernan, C.F., Welch, B.L.  
1979. Subspecies Specificity of Gall Forms on Chrysothamnus nauseosus. Great Basin Naturalist, Vol. 39, No. 1, pp. 81-87.
- McArthur, E.D., Blauer, A.C., Plummer, A.P., and Stevens, R.  
1979. Characteristics and Hybridization of Important Intermountain Shrubs. III. Sunflower Family, USDA-Forest Service Research Paper Int-220, Intermountain Forest and Range Experiment Station, Ogden, Utah.
- McMinn, H.E.  
1959. An Illustrated Manual of California Shrubs. University of California Press, Berkeley, Calif.
- Munz, P.A.  
1959. A California Flora. University of California Press, Berkeley, Calif.





